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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/410,626	10/01/1999	ATSUKO OHARA	21.1936/GMG	7139

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STAAS & HALSEY LLP
700 11TH STREET, NW
SUITE 500
WASHINGTON, DC 20001

EXAMINER
DASTOURI, MEHRDAD

ART UNIT	PAPER NUMBER
2623	9

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/410,626	OHARA ET AL.	
	Examiner	Art Unit	
	Mehrdad Dastouri	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 March 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,16-22,24-27 and 29-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,16-22,24-27 and 29-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. Applicants' amendment filed March 10, 2003, has been entered and made of record.

2. Objection to Claims 1-6, 8, 9, 12, 14 and 22 have been withdrawn in view of cancellation of Claims 1 and 10-15, and amending Claims 2, 3, 6 and 22.

3. 35 U.S.C. 112, second paragraph rejection of Claims 7, 14 and 34 have been withdrawn in view of cancellation of Claim 14 and amendments to Claims 7 and 34.

4. Applicants' arguments have been fully considered but they are not persuasive.

Applicants argue in essence that prior art of record (Takeda et al) can not distinguish the corner pattern in a case of existence of blur on the corner. It should be noted that Claimed invention does not recite distinguishing the corner pattern in a case of existence of blur on the corner. In particular, Claim 6 limitation concerning the pixel density changes in a fixed order, does not correspond to the existence of blur on the corner. Consequently, Takeda et al teachings meet the claimed invention limitations.

Likewise, Claim 9 does not recite performing highly accurate character recognition. Tsuchiya et al teachings reasonably disclose Claim 9 limitations (Figure 19; Column 10 , Lines 56-67, Column 11, Lines 1-7).

It should be noted that the remaining arguments discussed in the remark section of the amendment merely repeats different claims of the instant invention without any reference to any deficiency in the teachings of the prior arts.

Claim Objections

5. Claims 7 and 34 are objected to because of the following informalities:

In Lines 2-4 of Claim 7, "the means for deciding a round corner part decides, in the case that a round corner part decided based on the pixel density change exists, another corner of the input image is decided as a round corner. ", should be corrected to "the means for deciding a round corner part decides, in the case that a round corner part decided based on the pixel density change exists, another corner of the input image is a round corner. "

In Lines 2-4 of Claim 34, "the unit for deciding a round corner part decides, in the case that a round corner part decided based on the pixel density change exists, another corner of the input image is decided as a round corner. " should be corrected to "the means for deciding a round corner part decides, in the case that a round corner part decided based on the pixel density change exists, another corner of the input image is a round corner.".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 2-8, 16, 26, 29-35 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Takeda et al (U.S. 5,228,100).

Regarding Claim 2, Takeda et al disclose a table image processing device comprising:

means for inputting an image comprising a sheet image including ruled lines (Figures 1-4, Image Input Device 93, Ruled line 100; Column 7, Lines 58-65; Column 8, Lines 51-68, Column 9, Lines 1-9);

means for extracting a line extracting the longitudinal line and lateral line from an input image (Figures 2-4, 8, 11A and 11B; Column 8, Lines 34-38; Column 10, Lines 26-62);

means for finding a potential match of a round corner region extracting an oblique line which commences from a terminal of a line found by the line extracting means, and finding a potential match of the round corner region based on the oblique line (Figures 20A-20F, 21-23; Column 14, Lines 15-35);

means for extracting a cell finding cells containing the potential match of the round corner found by the potential match of the round corner region finding means (Figure 8; Column 10, Lines 62-68, Column 11, Lines 1-12; Figures 20A-20F, 21-23; Column 14, Lines 36-51); and

means for deciding a round corner part deciding a round corner based on the cells found by the cell extracting means (Figures 20A-20F, 21-23; Column 14, Lines 51-67, Column 15, Lines 1-55), wherein the means for finding the potential match of the round corner region extracts the oblique element by extracting a first oblique element

starting a terminal of a longitudinal line, and a second oblique element commencing from a terminal of a lateral line within the lines found by the line extracting means (Figures 20A-20F, 21-23; Column 14, Lines 51-67, Column 15, Lines 1-55. As depicted in Figures20A-B and 21, first oblique line is extracted from the region surrounded by horizontal lines H_1 and H_2, and vertical lines V_2 and V_3, and second oblique line is extracted from the region surrounded by horizontal lines H_2 and H_3 and vertical lines V_1 and V_2.); wherein the round corner region is decided based upon the relationship of the two oblique lines (Figures 20A-20F, 21-23; Column 14, Lines 51-67, Column 15, Lines 1-55; Figures 71, 72, 73A-B and 74A-B; Column 28, Lines 43-68, Column 29, Lines 1-57).

Regarding Claim 3, Takeda et al further disclose the table image processing device in Claim 2, wherein the means finding a potential match of around corner region decides, in case that the first oblique element and the second oblique element overlap, the part as the potential match of the round corner (Figures 71, 72, 73A-B and 74A-B; Column 28, Lines 43-68, Column 29, Lines 1-57; 20A-20F, 21-23; Column 14, Lines 51-67, Column 15, Lines 1-55; Figures . As depicted in Figures20A-B and 21, first oblique line extracted from the region surrounded by horizontal lines H_1 and H_2, and vertical lines V_2 and V_3, and second oblique line extracted from the region surrounded by horizontal lines H_2, and H_3 and vertical lines V_1 and V_2 overlap each other.).

Regarding Claim 4, Takeda et al further disclose the table image processing device in Claim 2, wherein the means for finding a potential match of a round corner region decides the part as the potential match of the round corner region in case that

the first oblique element and the second oblique element are within a distance fixed in advance and there is a pattern showing a line feature between them, or contact or overlap each other (Figures 20A-20F, 21-23; Column 14, Lines 51-67, Column 15, Lines 1-55. As depicted in Figures20A-B and 21, first oblique line extracted from the region surrounded by horizontal lines H_1 and H_2, and vertical lines V_2 and V_3, and second oblique line extracted from the region surrounded by horizontal lines H_2 and H_3 and vertical lines V_1 and V_2 contact with each other and overlap each other.).

Regarding Claim 5, Takeda et al further disclose the table image processing device in Claim 2, wherein the means for finding potential match of the round corner region decides the part as the potential match of the round corner region in case that any another oblique element does not exist near an identified oblique element and there is a pattern showing a line feature at the terminal of the identified oblique line (Figures 20A-20F, 21-23; Column 14, Lines 51-67, Column 15, Lines 1-55. As depicted in Figures 20A-20F, there is not any other oblique element near the identified oblique elements, and there is a pattern showing a line feature at the terminal of the identified oblique line.).

Regarding Claims 6 and 37, arguments analogous to those presented for Claim 2, are applicable to Claims 6 and 37.

Takeda et al further disclose the table image processing device in Claim 1, wherein the means for round corner part decides the part as the round corner in case that the pixel density at a corner of a cell extracted by the means for extracting the cell

changes in a fixed order (Figures 20C-20F; Column 14, Lines 51-67, Column 15, Lines 1-4).

Regarding Claim 7, as best understood by the Examiner, Takeda et al further disclose the table image processing device in Claim 1, wherein the means for deciding a round corner part decides the part as the round corner, in case that a round corner part decided based on the pixel density change exists, another corner of the input image is decided as a round corner (Figures 20C-20F; Column 14, Lines 51-67, Column 15, Lines 1-55).

Regarding Claim 8, Takeda et al further disclose the table image processing device in Claim 1, wherein the means for deciding a round corner decides, in case that a pattern of nth order function generated between the terminals of lines extracted by the means for extracting line matches a part of the input image, the part as the round corner (Figures 20C-20F; Column 14, Lines 51-67, Column 15, Lines 1-4. The non-linear curves in Figures 20C-20F depict a pattern of nth order function.).

With regards to Claims 16, 26 and 29, arguments analogous to those presented for Claim 2 are applicable to Claims 16, 26 and 29.

With regards to Claim 30, arguments analogous to those presented for Claim 3 are applicable to Claim 30.

With regards to Claim 31, arguments analogous to those presented for Claim 4 are applicable to Claim 31.

With regards to Claim 32, arguments analogous to those presented for Claim 5 are applicable to Claim 32.

With regards to Claim 33, arguments analogous to those presented for Claim 6 are applicable to Claim 33.

With regards to Claim 34, arguments analogous to those presented for Claim 7 are applicable to Claim 34.

With regards to Claim 35, arguments analogous to those presented for Claim 8 are applicable to Claim 35.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.
>
> The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

9. Claims 17-21, 25 and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Katsuyama et al (U.S. 6,035,061).

Regarding Claim 17, Katsuyama et al disclose a table image processing device comprising:

means for processing finding a ruled line, wherein the means for processing finding the ruled line comprising:

means for extracting a line extracting longitudinal lines and lateral lines from an input image (Figure 5, Step S27);

means for finding a ruled line by using the longitudinal lines and the lateral lines extracted from the means for extracting lines as the potential match of the ruled line and for deciding whether the potential match of the ruled line is a ruled line or not (Figures 11-13; Column 10, Lines 58-67, Column 11, Lines 1-14);

wherein the means for finding ruled line finds whether the identified potential match of the ruled line is a ruled line or not based on roughness of the potential match of the ruled line and any one of threshold of different plural thresholds corresponding to another image pattern extracted from the input image pattern existing around the identified potential match of the ruled line (Figures 11-13; Column 10, Lines 58-67, Column 11, Lines 1-14).

Regarding Claim 18, Katsuyama et al further disclose the table image processing device in Claim 17, wherein the means for processing finding a ruled line comprises:

a pixel density finding part finding whether the identified potential match of the ruled line is ruled line or not based on the roughness of the potential match of the ruled line by using a first threshold fixed in advance and a second threshold fixed in advance higher than the first threshold (Figures 11-13; Column 10, Lines 58-67, Column 11, Lines 1-9),

wherein the pixel density finding process part, corresponding to the pixel density of the image pattern existing around the identified potential match of the ruled line, uses the first threshold in a case that the pixel density of the image pattern other than the identified potential match of ruled line is high, and uses the second threshold in a case

that the pixel density of the image pattern other than the identified potential match of ruled line is low (Column 11, Lines 4-9; Column 12, Lines 31-37).

Regarding Claim 19, Katsuyama et al disclose the table image processing device in Claim 18 ,wherein the means for finding ruled line finding comprising:

when the potential match of the ruled line is a longitudinal line, an image pattern of same length as the potential match of the ruled line existing right and left side of the potential match of the ruled line within a fixed range is used as the image pattern existing around the potential match of the ruled line (Figures 11-13; Column 10, Lines 58-67, Column 11, Lines 1-3),

when the potential match of the ruled line is a lateral line, an image pattern of same length as the potential match of the ruled line existing up and under of the potential match of the ruled line within in a fixed range is used as the image pattern existing around the identified potential match of the ruled line (Figures 11-13; Column 11, Lines 4-9).

Regarding Claim 20, Katsuyama et al disclose the table image processing device in Claim 17, wherein the means for finding ruled line finding comprising ruled line width finding means finding whether the potential match of the ruled line is ruled line or not based on the roughness found by the first threshold fixed in advance or the second threshold fixed in advance higher than the first threshold (Figure 40; Column 22, Lines 1-12);

Wherein the ruled line width finding process means, corresponding to the width of the image pattern existing around the identified potential match of the ruled line, uses

the first threshold in a case that the width of the image pattern is wide, and uses the second threshold in a case that the width of the image pattern is narrow (Column 22, Lines 1-67, Column 23, Lines 1-30).

Regarding Claim 21, Katsuyama et al disclose the table image processing device in Claim 20, wherein the ruled line width finding means uses the potential match of the ruled line extending to same direction as the identified potential match of ruled line and adjacent or connected to the identified potential match of ruled line as the image pattern existing around the identified potential match of ruled line (Figure 11; Column 10, Lines 58-67, Column 11, Lines 1-3).

With regards to Claims 25 and 27, arguments analogous to those presented for Claim 17 are applicable to Claims 25 and 27.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 9 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al (U.S. 5,228,100) in view of Tsuchiya et al (U.S. 5,857,034).

Takeda et al do not explicitly disclose further limitations of Claim 9.

Tsuchiya et al disclose a method for processing character data comprising:

means for finding regions recognizing character finding the character recognition region by neglecting the round corner part decided by the means for deciding round

corner in the cells containing the round corner (Figure 19; Column 10 , Lines 56-67, Column 11, Lines 1-7).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Takeda et al invention according to the teachings of Tsuchiya et al to implement further limitations of Claim 9 because it will expand the versatility of table image processing system and will prohibit overlapping the character data and table image ruled lines.

With regards to Claim 36, arguments analogous to those presented for Claim 9 are applicable to Claim 36.

12. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katsuyama et al (U.S. 6,035,061).

Regarding Claim 22, Katsuyama et al disclose the table image processing device in Claim 20, wherein the ruled line width finding means decides the width of the potential match of the ruled line to be wide in a case that the width of potential match of ruled line is wide in a case that the width of potential match of ruled line is greater than the n times of the width of the image pattern existing around the identified potential match of ruled line (Column 22, Lines 10-12, n=4), and the width of potential match of ruled line is narrow in a case that the width of potential match of ruled line is less than the 1/n times of the width of the image pattern existing around the identified potential match of ruled line (Figure 40; Column 21, Lines 33-67, Column 22, Lines 1-65, in particular Items (r) and [#12]).

Katsuyama et al disclose the value of 0.4 for narrow ruled line in lieu of the value ¼.

Assigning a value for the width of the ruled lines (0.25 or 0.4) is the designer choice and is in the same order of magnitude.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Katsuyama et al invention to consider a value of 1/n (1/40 for the width of the narrow ruled lines because it is a reasonable value for narrow ruled line's width and a logical selection in the order of magnitude considered in the art for practical purposes.

13. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeda et al (U.S. 5,228,100) further in view of Katsuyama et al (U.S. 6,035,061) and Tsuchiya et al (U.S. 5,857,034).

With regards to Claim 24, arguments analogous to those presented for Claims 2, 9 and 17 are applicable to Claim 24.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mehrdad Dastouri whose telephone number is (703) 305-2438. The examiner can normally be reached on Monday to Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9143 for regular communications and (703) 872-9143 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology Center Customer Service Office whose telephone number is (703) 306-0377.

Mehrdad Dastouri
Primary Examiner
Group Art Unit 2623
May 29, 2003